# ENTOMOLOGICAL NEWS

APRIL 1961

Vol. LXXII No. 4

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PUBLISHED MONTHLY, EXCEPT AUGUST AND SEPTEMBER, BY
THE AMERICAN ENTOMOLOGICAL SOCIETY
PRINCE AND LEMON STS., LANCASTER, PA.
AND
1900 RACE STREET, PHILADELPHIA 3, PA.

Subscription, per yearly volume of ten numbers: $5.00 domestic; $5.30 foreign; $5.15 Canada.
Second-class postage paid at Lancaster, Pa.

# ENTOMOLOGICAL NEWS

**ENTOMOLOGICAL NEWS** is published monthly, excepting August and September, by The American Entomological Society at Prince and Lemon Sts., Lancaster, Pa., and the Academy of Natural Sciences, 1900 Race Street, Philadelphia 3, Pa., U. S. A.

PHILIP P. CALVERT, Editor Emeritus. R. G. SCHMIEDER, Editor. Editorial Staff: H. J. GRANT, JR., E. J. F. MARX, M. E. PHILLIPS, and J. A. G. REHN.

**SUBSCRIPTIONS:** Communications and remittances to be addressed to **Entomological News, 1900 Race Street, Philadelphia 3, Pa.**

Prices per yearly volume of 10 numbers.

**Private subscriptions,** for personal use: in the United States, $5.00; Canada, $5.15; other countries, $5.30.

**Institutional subscriptions,** for libraries, laboratories, etc.: in the United States, $6.00; Canada, $6.15; other countries, $6.30.

**ADVERTISEMENTS:** Rate schedules available from the editor.

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Plates printed one side: First 50, $3.47; Additional 100's, $2.61.

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HERBERT FERLANDO SCHWARZ

# ENTOMOLOGICAL NEWS

VOL. LXXII APRIL, 1961 No. 4

## Herbert Ferlando Schwarz
## 1883–1960

After a full life of service and devotion to family, friends and country, Herbert Schwarz died on October 2, 1960. He was one of those rare individuals whose high code of honor and genuine sincerity charmed all who met him. He left behind friends in numbers in all parts of the world who will long remember him for his kindness, generosity and graciousness. A man of exceeding modesty, he took pleasure in praising the deeds and works of others but never mentioned his own. A man of great patriotism and love of country, he served in the Field Artillery during the First World War. A dedicated scholar all his life, he applied his broad knowledge to several fields with outstanding success. He stood high in the esteem of scientific colleagues throughout the world and left as his monument papers on bees that will long remain definitive works on the group. To his closest friends Herbert Schwarz personified all that was fine and noble in man.

Herbert Schwarz was born on Fire Island, near Long Island, New York, on September 7, 1883, the son of Frederick A. O. Schwarz and Caroline Clausen Schwarz. His preparatory schooling was acquired at the Phillips Exeter Academy, from which he graduated in 1900. After four years of work at Harvard University, he received the Bachelor of Arts degree in 1904. His liberal education emphasized literature, writing and languages, and in 1905, after a year of graduate study he was awarded the Master of Arts degree in philosophy. Continuation of his schooling at Columbia University brought him another Master of Arts degree in Elizabethan literature in

1907. Among his later honors was election to Sigma Xi. As an undergraduate he developed a keen interest in natural history and anthropology, especially Indian lore, which was responsible for taking him into the Southwest in 1904 and 1905 for study of the aboriginal cultures of that area. Fascinated by the lives and myths of the Navajos and the Pueblo tribes, he brought together a large body of notes on these peoples. One of his first published papers was concerned with the "Spider Myths of the American Indians" and brought to light many of the charming details of this Indian mythology.

Herbert Schwarz always identified himself with the metropolitan area and spoke in the manner of the cultured New Yorker. His father had come to this country from Herford in Germany and had established the F. A. O. Schwarz toy company on Fifth Avenue, which in its specialty has become one of the landmarks of the city. Herbert was associated with the business for over fifty-five years, as an officer of the corporation in its early days and as a director during the last twenty-seven years of his life. His proficiency in modern languages was undoubtedly aided by numerous travels to all parts of the world. He spoke and read German fluently and had an excellent knowledge of Spanish, French and other Romance languages which he continued to study most of his life.

Schwarz in 1910 married Dorothy Constable, who was his frequent companion on subsequent trips and maintained a close interest in all his activities. Their four daughters are: Mrs. Barbara French, Mrs. Eleanor Stock, Mrs. Dorothy Hines and Miss Marjorie Schwarz.

During the period from 1909 to 1919 Herbert Schwarz acted as head of the editorial department and member of the board of G. P. Putnam's Sons in New York City. With a command of word and phrase reserved only to the gifted, it was inevitable that Schwarz would shine in the editorial and publishing field. He wrote fluently with a bold, handsome script and was a voracious reader of good books. A grievous fault, or so he told me, was his addiction to polysyllabic words and a ready acceptance of repetition with eddying currents of thought to bring out finer

flavors and more exact meanings in writings. His leanings toward anthropology and natural history qualified him for editorial participation in the Putnam Field Book series.

To Schwarz, as editorial and lay adviser, came a book which was to have strong influence in shaping his future life. This was the "Field Book of Insects" by Dr. Frank E. Lutz, then curator of insects of the American Museum of Natural History. This work was published in 1918 and still remains, after forty years, the outstanding field guide on insects for the amateur and general student. Lutz and the gentle, reserved Schwarz were about the same age and they quickly became close personal friends. They were opposites in many ways, with Lutz a man of penetrating mind who loved nothing more than to shock friend and foe with piercing barbs. Lutz kindled in Schwarz his first interests in insects and, because of his own liking for the biology and physiology of the bees, directed Schwarz's attention to the study of these captivating social insects. On many occasions Herbert Schwarz expressed his great admiration for Frank E. Lutz and regarded him as his teacher and mentor.

Herbert Schwarz's career at the American Museum of Natural History began in a modest way in 1919 when he spent three months in Colorado as a volunteer assistant with Dr. Lutz on a field expedition from the Department of Entomology. It was on this or a similar trip that he first met T. D. A. Cockerell who further encouraged his interest in bees and with whom he shared a close friendship and engaged in voluminous correspondence until Cockerell's death. In 1921, Schwarz was appointed as Research Associate of the Department of Entomology and he retained this post until his death, on a nearly full time basis. His interest in the American Museum and its manifold activities was very great and he participated in many ways. Thus, from 1921 to 1925 he was editor of Natural History magazine, and, following the death of Dr. Lutz in 1943, Schwarz was appointed acting chairman of the Entomology Department of the Museum, and he gave unreservedly of his time during the war period.

Once he had succumbed to the lure of insects, Herbert

Schwarz swiftly became a full-fledged entomologist and participated in many Museum field trips to far places. On most of these he was accompanied by one or both of his closest personal friends, Frank E. Lutz and Irving Huntington, but other trips were taken alone. Some of the areas visited were: Colorado, 1919; southern Florida in 1923; the Brownsville region of Texas in 1925; Barro Colorado Island, Canal Zone, in 1930 and 1933; the Cauca Valley of Colombia, in 1935; central Mexico and Yucatan in 1946; and southern Mexico in 1947. In addition to these collecting and field study expeditions Schwarz visited museums and scientific institutions all over the world, often with his wife and members of the family.

During his life Schwarz was active in many organizations to which he gave generously of time and money. As a Harvard graduate with fondest memories of early school years, he maintained close ties with his university and its Museum of Comparative Zoology and served on many committees. He often entertained friends and visitors at the Harvard Club on West Forty-fourth Street in New York, where his geniality as host will always remain a bright spot in the memories of his guests. As a Corresponding Member of the American Entomological Society, Schwarz was personally well-known to the older group of its membership. To Mr. J. A. G. Rehn, he was a good friend and "one of nature's noblemen, beloved by all who knew him for his many kindnesses, his courtesy—things increasingly rare in this matter-of-fact world."

Local organizations claimed a large share of Schwarz's interest. In 1919 he joined the New York Entomological Society and maintained a constant interest until his death. Here he fraternized with such now departed or inactive entomological stalwarts as William T. Davis, John D. Sherman, Ernest Bell, Andrew Mutchler, Charles Leng, and Frank Watson. He served on many committees, on the Board, and as President of the New York Entomological Society in 1935. He was also active in the National Audubon Society and the New York Academy of Sciences. Of the latter he was a Fellow and Council member for many years and Editor of Publications from

1925 to 1936. Another of his great interests was the Explorers' Club which he joined in 1921 and to which he gave sterling service as a Director and on various committees for many years. He was also for many years a member of Squadron A, a local cavalry group, which had its headquarters in the Old Armory.

Many of Schwarz's early papers were published in Natural History magazine during his tenure as editor. The broad scope of his writing is reflected in such titles as "Floral Designs in Textiles," "Eclipses, as Interpreted by the American Aborigines," "Swinging a Net in Southern Florida" and what may well have been his first published writing, "Tobacco as a Cure for Ailments." Thereafter, most of his publications, totalling at least sixty, were scientific contributions dealing rather exclusively with the bees of two groups. Much of what is known on the megachilid bees of the subfamily Anthidiinae we owe to Schwarz whose series of basic papers is still the standard reference for the group. The stingless honeybees of the family Meliponidae (or Apidae) became Schwarz's special province and made him known to entomologists throughout the world. His greatest work is a voluminous tome exceeding five hundred printed pages, profusely illustrated, and entitled "Stingless Bees (Meliponidae) of the Western Hemisphere," which was published as a Bulletin of the American Museum of Natural History. Almost one third of these pages are devoted to the biology and natural history of stingless bees of the entire world and the remainder assigned to the systematics of the principal genera of the New World. This work will long remain a personal monument to the untiring devotion of a fine man. In its size and scope we see so much of what we admired in the man; it is the fruit of a keen, inquiring mind delineated in a boundless wealth of expression, an enduring work on a group of insects which he grew to love.

WILLIS J. GERTSCH

# Occurrence of the European Pselaphid Beetle Trichonyx sulcicollis (Reichenbach) in New York State

By KENNETH W. COOPER, Hanover, N. H.

Nearly 30 years ago (June 13, 1931), at Kissena Lake Park, Flushing, L. I., I collected a large female pselaphid beetle (*ca.* 2.5 mm. long) from under bark and in company with the ant *Lasius umbratus* (Nyl.). In 1947 the specimen came into Prof. Orlando Park's possession when he purchased the Pselaphidae in the collection of my boyhood friend and teacher, the late Charles A. Schaeffer of the Brooklyn Museum. Park identified the beetle as *Trichonyx sulcicollis* (Reichenbach), a fairly uncommon euplectine pselaphid found throughout much of Europe.

"Since no species of pselaphid has been known to inhabit both Europe and the United States," Park (1953a) says, "the reader may well imagine with what care this New York insect was identified, and the determination checked and rechecked over the past several years." Though Flushing, locale of the well-known and extensive nineteenth century Prince (="Linnaean Botanic Gardens," founded *ca.* 1737) and Bloodgood (founded *ca.* 1797) nurseries, the early histories of which have been commented upon by Mandeville (1860), had in fact been the site of discovery of two other introduced beetles (*Asaphidion flavipes* L., and *Bitoma crenata* Fabr., *v.* Cooper 1930), Park was extremely cautious in concluding that the specimen of *Trichonyx sulcicollis* (Reich.) before him represented a genuine introduction. Indeed his comments impelled me, during brief visits to Flushing in late springtime (1956–60), to search in the region of the original capture even though it has long been destroyed as a natural area. *Bitoma crenata* Fabr. is still frequent in the area, especially under the bark of cherry, but neither *Asaphidion* nor *Trichonyx* were found there again. Unexpectedly, however, *Trichonyx sulcicollis* (Reich.) has recently been found at Rochester, N. Y., and there can no longer be question that this pselaphid is present in our fauna and should be included in our catalogs and keys.

The second specimen, also a female, was found in a Berlese funnel sample made by Prof. William B. Muchmore, expert on isopods and pseudoscorpions, at Rochester, N. Y. (sample 124; May 25, 1957; old mouse nest occupied by bumblebees, from under old railroad tie, River Boulevard near Mt. Hope Cemetery), within the city limits. The pselaphid, awakening dormant memory the moment I viewed the sample, ran directly to *Trichonyx* in Park's (1953) key to the genera of pselaphids of the U. S., and checked well with *Trichonyx sulcicollis* (Reichenbach) in the only European keys and descriptions available to me (namely Seidlitz, 1891; Ganglbauer, 1895). Park has confirmed my identification (letter of May 17, 1960), and the specimen remains in his collection along with that originally caught in Flushing.

As in the first case, The Rochester specimen of *Trichonyx sulcicollis* (Reich.) was also taken in association with ants, and most remarkably with *Ponera coarctata pennsylvanica* Buckley (det. by Dr. M. R. Smith, U.S.N.M.). Correspondingly the Rochester locality at which the pselaphid was taken is not far from the site of an old Rochester nursery which, until the first World War, imported stock from Europe, and the area now harbors enduring populations of the European isopods *Hyloniscus riparius* (Koch) and *Platyarthrus hoffmanseggi* Brandt (Muchmore, 1957), as well as the European geophilomorphous centipede *Chaetechelyne vesuviana* (Newport) (Crabill, 1955), and a blind hypogaeic colydiid beetle that is also most probably an importation from Europe (unpublished).

The two records of *Trichonyx sulcicollis* (Reich.) from New York State, no less the details of each capture, indicate that this beetle is established in the United States, and probably has been so established for well over 30 years. Donisthorpe (1927) and Ganglbauer (1895) give *Lasius brunneus* (Latr.) and *Ponera coarctata* (Latr.) [but as *P. contracta* (Latr.)] as ant associates in Europe, and it is a striking fact that the two New York *Trichonyx* were found in the company of the related *Lasius umbratus* (Nyl.), also occurring in Europe, and the closely similar *Ponera coarctata pennsylvanica* Buckley. Association here

with appropriate ants, one of which is regarded as endemic, bespeaks successful immigration. It is, of course, most likely that the Rochester and Flushing areas were independently colonized, and it would not be surprising were *Trichonyx* to remain unfound or rare in intervening localities.

It is pleasant to thank Dr. Muchmore for his kindness in permitting me to sort through his extensive Berlese funnel samples, the unmounted remainder of which are now deposited in the U. S. National Museum.

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# The Collembola of New Mexico. IV. A New Genus of Isotominae [1, 2] (Entomobryidae)

By Harold George Scott [3]

Prior to the species recorded in this part, only 2 species of Isotominae were recorded from New Mexico: *Isotomurus retardatus* (by Folsom, 1937), and *Proisotoma frisoni* (by Scott, 1958). Specimens will be deposited with the Academy of Natural Sciences, Philadelphia, Pennsylvania.

## Genus **Biacanthella** gen. nov.

Type Species. *Biacanthella neomexicana* gen. et sp. nov.

Description. Body elongate, not subglobose; integument smooth, non-tuberculate; clothing of simple setae; bothriotricha absent; antenna 4-segmented, thick, heavy; postantennal organ elliptical, simple; eyes 8 and 8; mouthparts mandibulate; prothorax much shortened, membranous, with 1 or no setae dorsally; tenent hairs absent; unguiculus present; furcula present, short, not attaining collophore; mucro not ankylosed with dens; genital segment enlarged, anal segment reduced; anal spines 2, anus ventro-terminal.

Discussion. *Biacanthella* shows both hypogastrurine and isotomine characteristics, but is placed in the subfamily Isotominae because of its reduced, membranous pronotum. It differs from other known genera of Isotominae in the following combination of characters: Anal spines 2, furcula and unguiculus present, anus ventro-terminal.

[1] A portion of a dissertation submitted to the Graduate Faculty of the University of New Mexico, Albuquerque, in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

[2] Part III appeared in Ent. News, 71(3): 57–65.

[3] Training Branch, Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Georgia.

**Biacanthella neomexicana** gen. et sp. nov. Figures 1–8

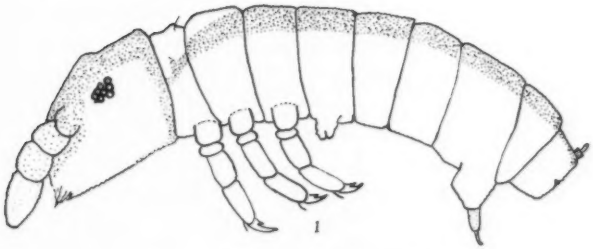
TYPE LOCALITY. Holotype and 31 paratypes, Doc. Long's Picnic Area, Sandia Mts., Bernalillo Co., New Mexico; Berlese of Gambel oak litter, 7,400 ft., 29–v–1951, by C. Clayton Hoff.

DESCRIPTION. Body elongate, clearly segmented; integument smooth, appearing minutely tuberculate under high magnifications; white, speckled dorsally with blue-gray on the tergites and head; antenna light blue-gray; legs and furcula white; body sparingly clothed with moderately long curving simple setae with a few peculiar bifurcate setae scattered laterally on the thorax; setae few anteriorly, becoming more-and-more numerous posteriorly until they are profuse on Abd VI; bothriotricha absent; head prognathous; ratio of antenna to head approximately 23:26; Ant IV with terminal tubercle, subapical papilla and slender curving olfactory setae; Ant III sense organ with 2 oblique basally bent sense rods and a protective integumentary fold; postantennal organ elliptical, simple, consisting of a single tubercle; eyes 8 and 8, subequal in size; pigmented eyepatches absent during life, but some ocular pigment may become visible in specimens after mounting; mouthparts mandibulate; ratio of prothorax to mesothorax to metathorax as 7:19:16; prothorax reduced, membranous with 1 seta located in the mid-dorsum of the pronotum; mesonotum not covering prothorax dorsally; trochanteral organ absent; tibiotarsus without distal subsegment; inner edge of unguis simple, curved strongly; ratio of unguiculus to unguis as 7:16; unguiculus not toothed; tenent hairs represented by a single unknobbed seta on each foot; segments of abdomen not overlapping but with well-developed intersegmental membranes; Abd III urotergite not ventro-laterally prolonged backward; sacs of ventral tube small; furcula reaching to caudal edge of Abd I and apparently attached to Abd IV;

---

*Biacanthella neomexicana* gen. et sp. nov.

1. Lateral view, 2. dorsal view, 3. lateral view of mucro, 4. lateral view of pronotum, 5. lateral view of left anal horn, 6. lateral view of left front foot, 7. left eyes and postantennal organ, 8. bifurcate seta on right side of mesothorax in dorsal view. Figures 2 and 8 of paratype, all others of holotype. Arrow indicates anterior for all figures.



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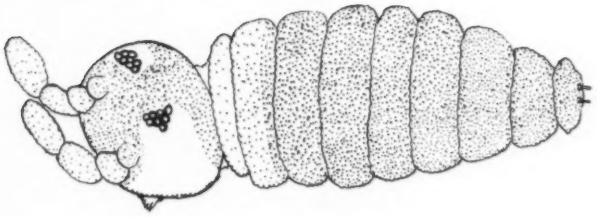

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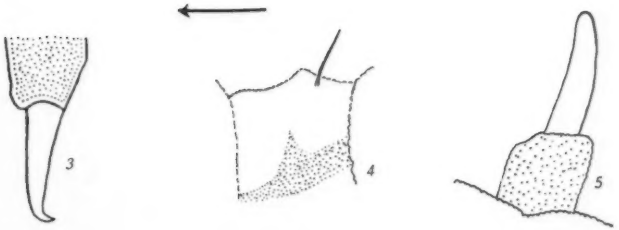

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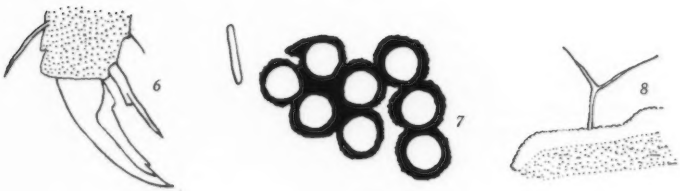

6 7 8

ratio of manubrium to dens to mucro as 9:7:2; manubrium with ventral setae; mucro unidentate; genital segment enlarged, anal segment reduced; anal appendages absent; length 1.0 mm.

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## Notes on the Geophilid Chilopods of Utah

By Ralph V. Chamberlin

This list of members of the Geophilida known to me personally as occurring in Utah has been drawn up primarily to assign to more recently recognized genera some of the species that were described many years ago.

### Chilenophilidae

**Arctogeophilus atopus** (Chamberlin)
*Geophilus atopus* Chamberlin, 1902, Amer. Nat. 36: 476.

This species is readily distinguishable superficially from related congeners in that the claw of the anal legs is represented by a small process or cuticular point only or, sometimes, is entirely absent. A very characteristic feature is the small median sharply defined circular clypeal area which is preceded by a pair of setae and followed by another pair. The labrum conforms rather closely to that of the generotype, *A. glacialis* Attems. The pairs of legs number prevailingly 67 or 69 but may be as few as 63.

This species is at present known from northern Arizona, from various points in Utah, and from Wyoming (e.g., at Devil's Tower).

**Arctogeophilus umbraticus** (McNeill)

*Mecistocephalus umbraticus* McNeill, 1887, Proc. U. S. Nat. Mus. 10: 322.

*Geophilus xenoporus* Chamberlin, 1902, Amer. Nat. 36: 475.

*Gnathomerium americanum* Ribaut, 1912, Bull. Soc. Toulouse 43: 120, figs. 12–17.

This widespread species seems to be the most abundant geophilid in Utah where it is common under decaying leaves and in leaf mold along the canyon streams of the Wahsatch, Uintah and Oquirrh Mts., etc.

**Watophilus utus** Chamberlin

*Watophilus utus* Chamberlin, 1928, Ent. News 39: 95.

This small geophilid, distinguishable from other known species by its larger number of legs, 65 pairs, is to date recorded or known only from San Juan Co., where it has been taken at Verdure, Bluff, and between LeSal and Moab.

Pachymerinidae

**Zygomerium rotarium** Chamberlin

*Zygomerium rotarium* Chamberlin, 1943, Proc. Biol. Soc. Washington 56: 100.

Known only from the holotype which was taken in City Creek Canyon, near Salt Lake City.

Geophilidae

**Brachygeophilus glyptus** (Chamberlin)

*Geophilus glyptus* Chamberlin, 1902, Amer. Nat. 36: 477.

This species occurs in the canyons of the Wahsatch, Oquirrh, and Stansbury Mts. While it appears to range into Idaho, Oregon specimens earlier referred to it belong to *B. oregonus*. A readily recognized difference is that while in *glyptus* the labrum is fimbriate throughout with about 12 processes on the median piece, in *oregonus* the median piece is not fimbriate but bears 5 or 6 stout teeth. Although *glyptus* sometimes bears a small tooth at the base of the claws of the prehensors, this is

often obsolete or absent. These claws when closed extend to or a little beyond the distal end of the first antennal article. The last ventral plate is very wide with its sides strongly converging caudad. The coxal pores number about 12 on each side, these partly covered by the sternite. The anal legs are clothed with abundant very short hairs and fewer long setae. Most commonly there are 67 or 69 pairs of legs but there may be as few as 63 pairs. The body length in grown specimens is commonly about 45 mm.

**Geophilus fruitanus** Chamberlin

*Geophilus fruitanus* Chamberlin, 1928, Ent. News 39: 310, 1930, Pan-Pacific Ent. 6: 114.

This species is as yet known only from Wayne Co. where it has been taken at Fruita and in Horse Valley.

**Geophilus piedus** Chamberlin

*Geophilus piedus* Chamberlin, 1930, Pan-Pacific Ent. 6: 114.

Known only from the male holotype which was taken at St. George, Washington Co.

**Geophilus shoshoneus** Chamberlin

*Geophilus shoshoneus* Chamberlin, 1925, Pan-Pacific Ent. 2: 59.

Recorded from Cache Co., where taken in Logan Canyon and on the divide between this canyon and the Bear Lake valley.

**Geophilus vittatus** (Rafinesque)

*Mycotheres* (*Nemopleura*) *vittata* Rafinesque, 1820, Annals of Nat. 1: 8.

*Geophilus rubens* Say, 1821, Journ. Acad. Nat. Sci. Phila. 2: 113.

*Geophilus vittatus* (Rafinesque), Crabill, 1954, Proc. Ent. Soc. Washington 56: 177.

This widespread species, which is rather common in Arizona and Idaho, is recorded from Washington Co., Utah, and will probably be found elsewhere throughout the state.

Dignathodontidae

**Damothus montis** Chamberlin

The type of this new form, a description of which is in course of publication elsewhere, was taken in Dry Canyon near Salt Lake City.

**Linotaenia chionophila** (Wood)

*Strigamia chionophila* Wood, Journ. Acad. Nat. Sci. Phila. ser. 2, 5: 50.
*Linotaenia miuropus* Chamberlin, 1902, Amer. Nat. 36: 475.
*Linotaenia chionophila* Chamberlin, 1911, Canadian Ent. 43: 260, 1923, N. A. Fauna 46: 212, 1925, Pan-Pac. Ent. 2: 59, 1928, Ent. News 39, 310, 1930, Pan-Pac. Ent. vol. 6, p. 114.

This species, abundant throughout Alaska and adjacent parts, has been found in the mountains throughout Utah.

**Linotaenia fulva** (Sager)

*Strigamia fulva* Sager, 1856, Proc. Acad. Nat. Sci. Phila. 8: 109.
*Linotaenia micropus* Chamberlin (part. max.), 1902, Amer. Nat. 36: 479.
*Strigamia fulva* Sager, Crabill, 1954, Ent. News 65: 41.

Occurring in canyons of the Wasatch Mts., especially at higher levels, from Cache to Sevier Co.

Himantariidae

**Stenophilus hesperus** (Chamberlin)

*Haplophilus hesperus* Chamberlin, 1928, Ent. News 39: 309.

Known thus far only from the holotype, a specimen 35 mm. long and possessing 71 pairs of legs, with claws of prehensors very slender. The mouthparts, which were not mentioned in the original account, conform in general to those of other known species of the genus but differ in details. The diastema in the coxosternum of the second maxillae is deeper and wider than in the other forms and the pectinae or processes of the labrum are more numerous.

Schendylidae

**Escaryus monticolens** Chamberlin

*Escaryus monticolens* Chamberlin, 1947, Pan-Pac. Ent. 23: 37.

Known only from Mill Creek Canyon, Salt Lake Co.

**Gosendyla socarnia** Chamberlin

A newly discovered form a description of which is appearing elsewhere.

**Nyctunguis molinor** Chamberlin

*Nyctunguis molinor* Chamberlin, 1925, Pan-Pac. Ent. 2: 58.

Known only from the mouth of Mill Creek Canyon, Salt Lake Co.

**Schendyla nemorensis** (C. L. Koch)

*Geophilus nemorensis* (C. L. Koch), 1836, Crust., Myr., u. Arachnida vol. 4, fasc. 9.

*Schendyla nemorensis* Bergsoe and Meinert, 1866, Naturhist. Tidsskr. ser. 3, 4: 105.

*Schendyla nemorensis* Bergsoe and Meinert, Chamberlin, 1909, Ann. Ent. Amer. 2: 175.

Not uncommon in Salt Lake and Utah counties.

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## Book Notices

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SELANDER, R. B. Bionomics, Systematics and Phylogeny of *Lytta,* a Genus of Blister Beetles (Coleoptera, Meloidae). Illinois Biological Monographs, No. 28, Pp. 1–295. University of Illinois Press, Urbana, Ill., 1960. Price: paper, $4.50; cloth, $5.50.

# The Genus Psilocurus Loew

By Frank Montgomery Hull, University of Mississippi

This small and interesting genus is predominantly Nearctic. Recently a species has been described by Oldroyd from the near East, making a total of seven known species, one of them Mexican. The author has collected six species in recent years, two of which are new and here described.

**Psilocurus pygmaeus,** new species

This species differs from *Psilocurus puellus* Bromley in that the under surface of the femora are black, except quite near the apex where they are a little reddish. Also the last 3 or 4 segments of the abdomen are light red in color. Length 7–8 mm.

Male. *Head:* The head is black, everywhere dusted with dense, greyish white pollen or fine micropubescence. Pile of the lower occiput white. Weak bristles start on the occiput below the middle of the head and are yellowish white in color, and become a little longer or more stout behind the vertex. Ocellarium with 1 or 2 minute hairs and wholly pollinose. Face with a few fine, short, yellowish white hairs distributed over the middle, each of them curled downward. Lower margin of the face with about 5 pairs of slender, rather tectiformed, pale yellow bristles. Palpus and proboscis shining black. Antenna black, first segment with a rather long, slender, white, bristly hair below, the second segment with comparatively long, black setae at the apex above and below. Third segment rather short oval, but pointed at the apex, widest across the middle, relatively broad and equally tapered from the middle in each direction.

*Thorax:* The thorax is shining black but rather obscured by completely appressed, short, coarse, brassy yellow pile. In addition the humerus and lateral margin of the postalar callosity are greyish to silvery white pollinose. The whole of the metanotum and all of the pleuron, except 2 abbreviated, vertical bare stripes, are densely silvery white pollinose. Scutellum black

with the same appressed yellowish pile as the mesonotum. Halteres pale yellow. Scutellum with 1 pair of black bristles, postalar callosity, supraalar region and notopleuron each with a black bristle.

*Legs:* The legs are black. The extreme apex of the front and middle femora dorsally, the ventral surface on the apical half only of these femora, the extreme base of the hind femur and the apical fifth of the hind femur ventrally reddish in color; also the extreme apex only of all the tibiae brownish yellow or orange. Legs covered with completely appressed, fine, pale yellow pile and with a few short, pale yellow bristles, which are comparatively long on the first 3 tarsal segments.

*Wings:* The wings are hyaline, except for very fine, brown villi. Venation typical.

*Abdomen:* The abdomen is slender, black on one to three basal segments, becoming reddish on the remainder of the abdomen and light orange brown on at least the last tergite and terminalia. Apex of prongs of surstylus black. Terminalia inverted. Sides of the tergites with 2 weak yellow bristles on each of the first three, 1 or 2 on the remaining tergites. Posterior triangles along the lateral margin of the tergites with thin, silvery white pollen which is easily obscured in individuals with bad preservation.

*Holotype:* Male, 20 miles west of Toyah, TEXAS, August 4, 1954, collected by F. M. Hull. Two *paratype* males with the same data.

**Psilocurus tibialis,** new species

A large black species. Femora of the male black, of the female light red. Tibiae black in both sexes. Length 10 mm.

Male. *Head:* The head is black, densely greyish white pollinose except on the upper occiput and posterior part of vertex where the pollen is brownish yellow, and on the face where the pollen and micropubescence is silvery. Middle of face with a few short, silvery hairs. Bristles of occiput, face and middle bristle from the middle of ventral surface of first antennal segment light yellow. Lower face quite rounded, the whole lower

third or more with moderately long, slender, yellowish bristles. Proboscis and antenna black.

*Thorax:* The thorax is dull black with flat appressed, brassy pile laterally. The middle of the mesonotum with much shorter appressed black hairs and a few brassy hairs intermixed. Pleuron yellowish to whitish pollinose, except for a bare, black stripe above the middle coxa and a similar spot above the hind coxa. Halteres yellowish, scutellum with yellowish pile, in both sexes with 1 pair of long, stout, black bristles. Mesonotal bristles black.

*Legs:* The femora are quite stout, in the male the legs are entirely black except for the extreme apex of all the femora and the extreme base of their tibia, which are yellowish to brownish. Pile appressed, brownish to yellowish white on the femora, rather silvery on the front and middle tibia and tarsi, black on the hind tibia and tarsi. Femora in the female entirely light red, their tibia are black except narrowly at the base which is yellowish. Pile as in the male, except that on hind tibia and tarsus the pile is light brassy to brownish yellow.

*Wings:* The wings are very pale brown, much of the color due to villi.

*Abdomen:* The abdomen is robust, quite black with a slight opalescent blue color but without any metallic or steel blue reflections. First 3 tergites laterally with large, greyish white, pollinose triangles. Fourth and fifth tergites with shorter triangles, which, however, are extended much farther inward along the posterior margin. Pile of the abdomen appressed and black in the middle of the tergites, becoming brassy laterally in the female and on the whole of the last tergite. Lateral bristles all pale yellow.

*Holotype:* Male, Uvalde, TEXAS, August 15, 1959. *Allotype* female with the same data, collected in the same field with *Psilocurus reinhardi,* by F. M. Hull.

**Psilocurus birdi** Curran

Five females, Oxford, Mississippi, July 5–14, 1934; 1 female, July 23, 1949.

**Psilocurus birdi** Curran, subspecies **pallustris,** new subspecies

Female. A large, robust species from 10 to 11 mm. in length. It differs from *Psilocurus birdi* Curran in the female by the abdominal color being quite black with whitish pollinose, lateral triangles. Bristles of the first tergite are black and the hind femur widely encircled by black ventrally leaving only base and apex yellowish.

*Holotype:* Female, Tobitubbe Flood Plain, Lafayette County, Mississippi, August 6, 1960; 10 *paratype* females, August 6–12, 1960; all collected on leaves of low growing plants; 1 paratype female on window of Post Office, University, Mississippi, July 6, 1959.

**Psilocurus nudiusculus** Loew

One female, July 13, 1956, on gravel on back driveway my home, University, Mississippi.

**Psilocurus reinhardi** Bromley

Two males and a female collected in a weedy meadow in the city limits of Uvalde, Texas, in deep shade, August 15, 1959. The metallic bluish or purplish color of abdomen of this species is characteristic. Legs of sexes alike or nearly so.

**Psilocurus modestus** Williston

One male, highway 18, near Damar, Kansas, July 18, 1959.

# On the Immature Stages of the Ptilodactylidae (Coleoptera)

By T. J. SPILMAN, Entomology Research Division, Agriculture Research Service, U. S. Department of Agriculture, Washington, D. C.

The biology and immature stages of the Ptilodactylidae are seldom mentioned in the literature. The larval stage is described and figured by Böving and Craighead (1930, Ent. Americana 11: 45, pls. 67–69) and by Peterson (1951, Larvae of insects, part 2: 66, fig. C30B). Horion, in volume 4 of his Faunistik der mitteleuropäischen Käfer (Ent. Arb. Mus. Frey, 1955, Sonderband, p. 138), gives a few references. Most of them concern captures in greenhouses containing palms, but one tells of *Ptilodactyla luteipes* Pic, an Indonesian species, being taken from the stem sheath of a banana plant in a European greenhouse. Chapin (1927, Trans. American Ent. Soc. 53: 247) states that *Ptilodactyla exotica* Chapin came ". . . from rose houses. The insect is reported as injurious in both larval and adult stages."

Now more specimens and information have come to light. Adults, a pupa, and larvae of *Ptilodactyla serricollis* (Say) were found in July, 1960, in the soil of a potted India rubber-plant, *Ficus elastica* Roxburgh, which was purchased from a store in Norfolk, Virginia, but which originated in Florida. There was some yellowing of leaves, and later the leaves began to drop off. This continued until the original soil was removed and the roots washed. The plant was then repotted in new soil and kept out of doors. Since that time the plant has made new growth and no further trouble has been evident. The adults were easily determined to species using Chapin's description (*op. cit.*, p. 242), and the larva agreed with the descriptions and pictures given by Peterson (*loc. cit.*).

The pupa of *P. serricollis,* unlike the pupae of many beetles, does not greatly resemble the adult stage, so it might be helpful to describe and illustrate it. Hinton in his fine study on gin-

traps (1946, Trans. Roy. Ent. Soc. London 97: 485, fig. 20) gives a sketch of a pupa labeled *Ptilodactyla* sp., from Brazil. The following is a description of the known pupae of the Ptilodactylidae. Head not visible in dorsal view. Pronotum trapezoidal in outline, with an elongate tubercle on each of four angles. Abdomen with a single gin-trap formed by posterior margin of first tergite and anterior margin of second tergite, this gin-trap without serrations and occupying median two-thirds of the width; tergites 2–6 each with a very short tubercle on lateral areas; tergites 3–7 each with a transverse row of very fine asperities near anterior margin or all without asperities; tergites 2–8 with long setae on posterior margin and shorter setae on disc; segment 9 having two attenuated, posteriorly directed urogomphi which are whitish except at their apices where they seem to be more heavily sclerotized.

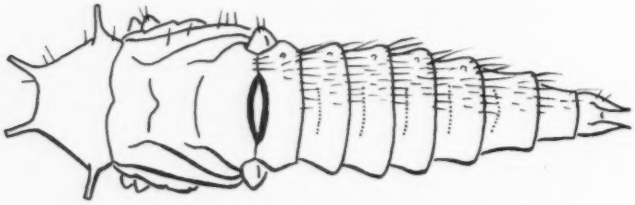

FIG. 1. Dorsal view of pupa of *Ptilodactyla serricollis*.

The asperities mentioned above may be used to separate the pupae of two species of *Ptilodactyla: serricollis* has an anterior transverse row of asperities on the median third of abdominal tergites 3–7, whereas *exotica* lacks asperities. The larvae are just as easily separated. The larva of *serricollis* has numerous setae between the anterior and posterior transverse rows of setae on abdominal tergites 1–8, as illustrated by Peterson (*op. cit.*, fig. C30B), and the inner spinose diverticle of segment 10 bears 5 spinose setae. The larva of *exotica* does not have setae between the anterior and posterior transverse rows of setae on abdominal tergites 1–8, as illustrated in Boving and Craighead

(*op. cit.*, pl. 67, fig. I) even though that drawing is labeled as a different species, and the inner spinose diverticle of segment 10 bears 7 or 8 setae.

The larvae and pupae of *exotica* used in this study were submitted with the type series of adults from Melrose, Illinois. Those and the specimens of *serricollis* from Norfolk, Virginia, are in the collection of the U. S. National Museum. I wish to thank Mr. W. F. Walsh, of the U. S. Department of Agriculture, in Roanoke, Virginia, for his help in obtaining the specimens of and data on *serricollis*.

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## The Type Locality of Gomphocerus clavatus Thomas (Orthoptera: Acrididae)[1]

By Gordon Alexander, University of Colorado,
Boulder, Colorado

In his description of *Gomphocerus clavatus* (in recent literature *Aeropedellus clavatus*), Cyrus Thomas (1873) gave "Kansas" as the locality from which the type specimen came. This locality was apparently not questioned until 1925, Kansas being repeatedly mentioned in the range of the species prior to that time. In 1925, Hebard stated that the type specimen "was apparently mislabelled, as the species may not occur in Kansas and that specimen, showing slight thickening of the cephalic tibiae, very probably came from a high elevation in the Rocky Mountains." The species has apparently never been taken in Kansas, so Hebard's 1925 opinion was reiterated in his later papers.

Caudell, in 1903, placed *Gomphocerus carpenterii* Thomas and *G. clepsydra* Scudder in synonymy with *Gomphocerus clavatus*. Hebard, in several papers (including his review of the Gomphoceri, 1935, in which he erected the genus *Aeropedellus* that now

[1] This study is part of a project made possible by National Science Foundation grant G-5007, here gratefully acknowledged. The author wishes also to thank Ashley B. Gurney and Harold J. Grant, Jr., for critically reading the manuscript.

includes the species in question), concurred in this view. Hebard, did, however, in 1928, suggest the possibility that the high and low altitude forms might be taxonomically distinct, in which case the name *clepsydra* would be available for the low altitude form. Recent studies by the writer demonstrate consistent differences between several populations of *Aeropedellus clavatus,* not merely those from high and low altitudes. It seems desirable, therefore, to designate the type locality with as much restriction as is consistent with the evidence.

Through the courtesy of Dr. Ashley B. Gurney, I had the opportunity a few months ago of examining in the United States National Museum the type specimen of *Gomphocerus clavatus.* The specimen, a male, formerly pinned, is now in a Riker mount. The four separate labels, apparently those that were attached to the pin, are as follows: Type/ Collection C. V. Riley/ Type No. 1036, U.S.N.M./ Stenobothrus clavatus Thos. Kansas/ This is the specimen recognized by Hebard (1927) as Thomas's type. The specimen was damaged considerably before being transferred to the present mount. It lacks both antennae, the structures on which the trivial name was based. Both metathoracic legs are missing; and, although the prothoracic legs are present, they are separated from the rest of the specimen.

In the original description, Thomas inserted the name "Dodge" in parenthesis after the locality. This referred to the collector, undoubtedly Charles R. Dodge, from whom Thomas received specimens collected by Dodge on a trip to the Rocky Mountains in the summer of 1871. The type specimen of *Caloptenus Dodgei* of Thomas (= *Melanoplus dodgei*) was collected on that trip. Its type locality was given in the description (Thomas, 1871) as "Pike's Peak, Colorado Territory," and in the final paragraph of the original description the altitude was stated as "about 10,000 feet above the level of the sea." The type specimen (U.S.N.M. No. 727) bears the data "Pike's Peak Col. Ter. 1871." It seems more than probable that the type of *Gomphocerus clavatus* was collected at about the same locality on the same trip (or probably at a little higher elevation, for both species occur commonly above timber line on Pikes Peak).

We know that Dodge collected on Pikes Peak; we have no evidence that he collected elsewhere in the Rocky Mountains. The locality label "Kansas," which is an error, may have been the result of a mistake in labelling or it may have been the careless use of a name that would have been valid a few years earlier. (Kansas Territory, a few years prior to Dodge's trip, did include Pikes Peak.) The likely explanation is that the label was added from memory, some time after Dodge left Colorado on his way east.

In recent comparisons of large series of specimens from scattered populations of *Aeropedellus clavatus* throughout the west my early impression that various populations are distinct was confirmed. It is apparent, for example, that one can distinguish between specimens from Pikes Peak and those from other alpine areas in Colorado. (It is noteworthy, of course, that the alpine areas of Pikes Peak are isolated from other similar areas in the Rockies.) With this in mind it occurred to me that a comparison of significant dimensions of the type specimen with corresponding ones from specimens of various populations, including the population on Pikes Peak, would give us further evidence for the locality from which the type came. In these comparisons, I have found two morphological ratios of more value in characterizing populations than absolute dimensions, although absolute size is quite significant in distinguishing low altitude (larger) specimens from those at high altitudes. The ratios used are: (a), length of the anterior tibia divided by its maximum width; and (b), length of the terminal seven antennal segments divided by the maximum width. (Although the antennae of the type are missing, we have Thomas's statement that the knob involved the last seven segments.) Both tibia and antenna, or either, or neither may be noticeably swollen in the individuals of certain high altitude populations.

In the accompanying table, dimensions (in millimeters) and ratios of dimensions from the type are compared with series of the same sex from various Colorado populations. The length of the type is my measurement. Thomas gave .56 in. for this figure, definitely an error, as was pointed out by Caudell (1903). I have used the dimension Thomas gave for the length

of the hind femur because that structure is missing and his measurement is a probable one. The figures given for the populations are the means and extremes of the numbers examined from each population. Examination of the table shows that the type could have come from the Pikes Peak population. All its dimensions are within the range for that population. It is extremely unlikely, however, that the type came from an alpine population further north (Mount Evans), an alpine population further south (Trinchera Peak), or a foothills population (Boulder). In each case, overall size, combined with the ratio of width to length of the anterior tibia, characterizes a distinct population.

I therefore propose that Pikes Peak, Colorado, at an elevation of 10,000 feet and above, be recognized as the type locality for *Gomphocerus clavatus* Thomas. The grounds for this proposal

TABLE 1.—Means (and Extremes) of Measurements and Ratios from Males of Various Colorado Populations of *Aeropedellus clavatus* (Thomas) Compared with the Same Data from the Type of *Gomphocerus clavatus*. Measurements are in Millimeters. Ratios are L, Length, Divided by W, Width

| | Total Length | Pronotum Length | Hind Femur Length | Anterior Tibia L/W | Antennal Knob L/W |
|---|---|---|---|---|---|
| Type of *Gomphocerus clavatus* | 17.6 | 3.3 | 10 | 6.1 | lost |
| Pikes Peak 12,900′ 20 males | 17.1 (15.5–18.5) | 3.7 (3.2–4.0) | 10 (9.5–10.5) | 5.8 (5.3–6.2) | 2.2 (1.8–2.8) |
| Mount Evans 13,100′ 26 males | 17.7 (16.7–18.5) | 3.8 (3.4–4.1) | 10.4 (9.6–11.0) | 4.2 (3.7–4.8) | 1.9 (1.6–2.4) |
| Trinchera Peak 12,000′ 15 males | 15.8 (14.8–16.7) | 3.5 (3.3–3.8) | 9.8 (9.3–10.4) | 4.7 (4.4–5.0) | 2.4 (2.2–2.6) |
| Boulder, Colo. foothills 5,800′ 20 males | 19.1 (18.2–20.7) | 3.7 (3.5–4.0) | 11.5 (10.9–11.9) | 6.9 (5.9–7.9) | 3.0 (2.3–3.8) |

are three: 1. The validity of Hebard's statement that the locality label was incorrect because the species is unknown in Kansas and because the morphology of the type specimen suggests that it came from high up in the Rocky Mountains. 2. The collector of the type, Charles R. Dodge, collected on Pikes Peak in 1871, and his specimens were available to Thomas. 3. The morphological pattern of the type specimen corresponds with the pattern of specimens from the Pikes Peak population but not with the pattern of specimens from other Colorado populations.

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